THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 12

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

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Ex parte WILLIAM H. RICHARDSON Jr.

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Appeal No. 1997-2305
Application 08/451,459[1]

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ON BRIEF

_____

Before KIMLIN, OWENS and LIEBERMAN, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION

This is an appeal from the examiner's final rejection of claims 11-30, which are all of the claims remaining in the

[1] Application for patent filed May 26, 1995. According to appellants, the application is a division of Application 07/854,938, filed March 20, 1992, now abandoned, which is a continuation-in-part 07/613,094, filed November 15, 1990, now abandoned.

application.

THE INVENTION

Appellant claims an electrical carbon arcing apparatus for producing fuel gas. Claim 11, 17 and 21 are illustrative and read as follows:

11. Apparatus adapted to convert carbon and water into a fuel gas, comprising

a reactor vessel partly filled with water to a given level,

a pair of spaced underwater graphite block electrodes therein each having an electrical terminal and together being adapted to be provided with electrical potential difference thereacross sufficient to strike an underwater arc when conductive means is interposed,

magazine means centered upright above the spaced electrodes and laterally surrounding a plurality of conductive rods and adapted to feed the rods one after another downward into interposed position,

each rod being adapted in such interposed position to contact edges of the respective block electrodes and thereby enable an arc to be struck to decompose water into constituents in gaseous form and into by-product gases containing carbon, as a mixed fuel gas.

17. Apparatus adapted to convert carbon and water into a fuel gas, comprising

a pair of spaced underwater graphite block electrodes each having an electrical terminal and together being adapted

to receive thereby from an external electrical source a potential difference thereacross sufficient to strike and maintain an underwater arc when conductive means is interposed therebetween,

each electrode being wedge-shaped with inclined uppermost face, the electrodes having their respective thin edges spaced apart and thereby adapted to receive a conductive rod interposed therebetween.

21. Fuel-gas production apparatus, comprising

means defining a reactor at least partly filled with water,

means providing a submerged underwater electric arc in the reactor, and

means providing carbon to the electric arc, whereby carbon and water are converted to fuel gas bubbling up through the water, and

means for collecting, compressing, and storing the fuel gas.

THE REFERENCE

Eldridge et al. (Eldridge) 603,058 Apr. 26, 1898

THE REJECTION

Claims 11-30 stand rejected under 35 U.S.C. § 103 as being unpatentable over Eldridge.

OPINION

We have carefully considered all of the arguments

advanced by appellant and the examiner and agree with appellant that the aforementioned rejection of claims 11-20 and 28-30 is not well founded. Accordingly, we reverse the rejection of these claims. We affirm the rejection of claims 21-27.

Claims 11-16

Claim 11 requires that the magazine means laterally surrounds a plurality of conductive rods. The examiner argues that a magazine is "[a]ny of various compartments attached to machines for storing or supplying necessary material",[2] and that Eldridge's clamping screw (26) is a magazine (answer, page 4). Even if the examiner is correct, the examiner has not established a *prima facie* case of obviousness of the apparatus recited in claim 11 because the examiner has not explained why Eldridge's' clamping screw device is capable of laterally surrounding a plurality of conductive rods. We therefore reverse the rejection of claim 11 and claims 12-16 which depend therefrom.

[2] *See Webster's II New Riverside University Dictionary* (1984).

Claims 17-20

Appellant's claim 17 requires that each of a pair of graphite block electrodes is wedge shaped with an inclined uppermost face, and that the electrodes have their respective thin edges spaced apart and thereby adapted to receive a conductive rod interposed between them. Eldridge discloses an electrode in the form of a flat disk (page 1, lines 94-95). The examiner argues that the shape of the electrodes is an obvious design modification because it has been well settled that such a modification is within the skill of the ordinary artisan, absent a showing of unexpected results (answer, page 4). This argument is not well taken because in order for a *prima facie* case of obviousness to be established, the teachings from the prior art itself must appear to have suggested the claimed subject matter to one of ordinary skill in the art. *See In re Rinehart*, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976). The mere fact that the prior art could be modified as proposed by the examiner is not sufficient to establish a *prima facie* case of obviousness. *See In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783 (Fed. Cir.

1992). The examiner must explain why the prior art would have suggested to one of ordinary skill in the art the desirability of the modification. *See Fritch*, 972 F.2d at 1266, 23 USPQ2d at 1783-84. Because the examiner has not provided such an explanation, the examiner has not carried the burden of establishing a *prima facie* case of obviousness of the apparatus recited in claim 17. Consequently, we reverse the rejection of this claim and claims 18-20 which depend therefrom.

Claims 21-27

Regarding claims 21-27, appellant presents separate arguments as to only claims 21, 22 and 26-30 (brief, pages 7-8). Claims 23-25, therefore, stand or fall with the claim from which

they depend, i.e., claim 21. *See In re Ochiai*, 71 F.3d 1565, 1566 n.2, 37 USPQ2d 1127, 1129 n.2 (Fed. Cir. 1995); 37 CFR § 1.192(c)(7)(1995).

Appellant argues that Eldridge’s apparatus does not

include a means for collecting, compressing and storing the fuel gas as recited in appellant's claim 21 (answer, page 7). Eldridge's apparatus includes a reactor capable of being at least partly filled with water, submergible electrodes for forming an electric arc, and a gasometer (50) which contains a vertically moving bell which fills with gas (page 1, lines 9-30; page 3, lines 41-65; Fig. 1). The gas is collected in the bell and stored until the gas is sent to a burner by opening regulating cock 56 (page 3, lines 65-73). It reasonably appears that the gas is under some pressure when it is in the bell and pushing the bell in the vertical direction.

Appellant argues that Eldridge does not disclose a magazine adapted to hold carbon therein and further adapted to dispense carbon therefrom into the electric arc as recited in claim 22 (brief, page 8). We give this claim its broadest reasonable interpretation consistent with the specification. *See In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); *In re Sneed*, 710 F.2d 1544, 1548, 218 USPQ 385, 388 (Fed. Cir. 1983); *In re Herz*, 537 F.2d 549, 551, 190 USPQ 461, 463 (CCPA 1976); *In re Okuzawa*, 537 F.2d 545, 548, 190

USPQ 464, 466 (CCPA 1976). Appellant does not define "magazine" in the specification. According to the dictionary definition set forth above, Eldridge's clamping screw and associated carbon carrier (25) can reasonably be considered to be a magazine because they form a compartment attached to a machine for storing a necessary material (carbon anode 14). The clamping screw and carbon carrier are capable of moving carbon anode 14 downward into an electrical arc (page 2, lines 102-108; page 3, lines 81-89).

Concerning claims 26 and 27, appellant argues that Eldridge does not disclose graphite as the material of construction of the electrodes (brief, page 8). Because electrical conductivity is a desirable characteristic of Eldridge's carbon electrodes (page 3, lines 76-81), the reference would have led one of ordinary skill in the art to make the electrodes out of the graphite crystalline allotropic form of carbon due to its high electrical conductivity.[3]

[3] *See The Condensed Chemical Dictionary* 422 (Van Nostrand Reinhold, 9th ed. 1977).

For the above reasons, we affirm the rejection of claims 21-27.

Claims 28-30 require that the apparatus recited in claim 21 is combined with an internal combustion engine which receives fuel gas from the apparatus. The examiner argues that combining Eldridge's apparatus with a conventional end use apparatus such as an internal combustion engine was within the skill in the art (answer, page 4). This argument is not persuasive because the examiner has provided no evidence that one of ordinary skill in the art at the time of appellant's invention would have considered Eldridge's hydrogen-rich fuel gas (page 1, lines 9-11) to be suitable as an internal combustion engine fuel. Hence, we reverse the rejection of claims 28-30.

DECISION

The rejection under 35 U.S.C. § 103 of claims 11-20 and 28-30 over Eldridge is reversed. The rejection under 35 U.S.C. § 103 of claims 21-27 over Eldridge is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

Edward C. Kimlin Administrative Patent Judge	)	
Terry J. Owens Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
Paul Lieberman Administrative Patent Judge	)	

TJO/pgg
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